

EXERCISES

For more exercises, see *Extra Skill and Word Problem Practice*.

Practice and Problem Solving

A Practice by Example

Examples 1 and 2
(pages 8 and 9)



Example 3
(page 9)

Simplify each expression.

1. $3 + 6 \times 4$

2. $35 \div 7 - 2$

3. $8 - 2 \cdot 3$

4. $6 - 6 \div 3$

5. $21 - 13 + 8$

6. $6 \cdot 2 + 4$

7. $12 - 8 \div 2 + 3$

8. $21 \div 7 + 14 \times 2$

9. $2 \cdot 2 + 0 \cdot 4$

10. $4(4) - 2(5)$

11. $2 + 3 \cdot 24 \div 6$

12. $4 \div 4 \cdot 4 + 4 - 4$

13. $7 + 3 \cdot (8 \div 4)$

14. $2(15 - 9) \cdot 9$

15. $[2 + (6 \cdot 8)] - 1$

16. $2(6) + \frac{7+8}{3}$

17. $3(7 + 4)$

18. $12 \div (3 - 2) + 1$

19. $6 + \frac{6+2}{4}$

20. $\frac{21+15}{3+6}$

21. $(21 + 3) \div 4 \div 2$

B Apply Your Skills

22. **Error Analysis** A student found the value of the expression $30 \div 6 - 1$ to be 6. Explain the student's error.

23. **Writing in Math** Why do we need to agree on an order of operations?

Simplify each expression. Justify your work.

24. $(56 - 5) \div 17$

25. $60 \div 4 + 9$

26. $2[8 + (5 - 3)] - 8$

27. $12 \div 3 \times 4$

28. $36 - 27 \div 9 \div 1$

29. $6(4 + 1) - 5$

30. $14 + 5 \times 2$

31. $440 \div (2 + 18)$

32. $16 \div 8 \times 2$

Compare. Use $>$, $<$, or $=$ to complete each statement.

33. $15 \cdot 3 - 2$ \square $15 \cdot (3 - 2)$

34. $18 - 6 \div 3$ \square $(18 - 6) \div 3$

35. $8 + 12 \div 4$ \square $(8 + 12) \div 4$

36. $22 - 7 \cdot 2$ \square $(22 - 7) \cdot 2$

37. $12 \div 3 + 9 \cdot 4$ \square $12 \div (3 + 9) \cdot 4$

38. $(19 - 15) \div (3 + 1)$ \square $19 - 15 \div 3 + 1$

Insert grouping symbols to make each number sentence true.

39. $7 + 4 \cdot 6 = 66$

40. $7 \cdot 8 - 6 + 3 = 17$

41. $3 + 8 - 2 \cdot 5 = 45$

42. **Multiple Choice** Insert grouping symbols to make the number sentence $3 + 8 - 2 \cdot 5 = 45$ correct.

(A) $(3 + 8) - 2 \cdot 5 = 45$

(B) $3 + (8 - 2) \cdot 5 = 45$

(C) $[3 + (8 - 2)] \cdot 5 = 45$

(D) $3 + [8 - (2 \cdot 5)] = 45$

Write a numerical expression for each phrase. Then simplify.

43. five added to the product of four and nine

44. twenty-one minus the sum of fifteen and five

45. seventeen minus the quotient of twenty-five and five

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